

Appendix Science and Career Resources

(Anchors) General Sciences/ Astrobiology/ Astronomy and Astrophysics/ Atmospheric Sciences/ Biology/ Careers/ Chemistry/ Computer Science/ Geology/ Engineering/ Management/ Mathematics/ Psychology

General Sciences

(Anchors) Curriculum Materials/ Events/ Museums, Science Centers and Field Trips/ Posters and Lithographs/ Speakers and Assemblies/ Videos and Slides/ Other Web Sites

Curriculum Materials

Ames Imaging Library Server (AILS)

<http://ails.arc.nasa.gov/AILS.html>

AILS is a living library of still images that chronicle the projects and activities of the NASA Ames Research Center. This site also provides links to other NASA image Web sites.

Central Operation of Resources for Educators (CORE)

<http://core.nasa.gov>

CORE serves as the worldwide distributor for NASA-produced multimedia materials. This includes a catalog of more than 200 videocassette, slide and CD-ROM programs.

Educator Resource Centers

<http://www.jpl.nasa.gov/forum/erccenter.html>

The ERCs provide educators with in-service and pre-service training demonstrations and access to NASA instructional materials suitable for use in the classroom. Much of the material is free; videotapes and slides may be copied. Resources include: curriculum materials, classroom activities, Internet access, lesson plans, computer programs, videos, 35 mm slides and publications.

NASA Spacelink

<http://spacelink.nasa.gov>

Spacelink is a NASA electronic resource specifically developed for use by the educational community and provides a wide variety of educational products - posters, lithographs, curriculum materials, multimedia resources (movie/audio clips.)

Events

Botball

<http://rspacm1.arc.nasa.gov/botball/index.html>

This program involves high school students, under the guidance of their teachers, and with consultation from members of the supporting organizations, in creating a mobile robot over four weeks to compete in a regional Botball tournament. Teachers and members of supporting organizations are involved in a three-day tutorial to learn robotic technology and integration into regular math and science curriculum prior to building the robots.

JASON Project

<http://www.jason.org>

JASON is a unique collaboration that utilizes telepresence technology to enable grade 3-9 classrooms to join in on and interact with ongoing research missions of the JASON team. Before implementing curriculum in the classroom and bringing students to Ames for the exciting broadcast and hands-on activities in the Spring, teachers must attend a one-day training in the Fall.

NASA Student Involvement Program

<http://www.nsip.net>

NSIP is a nationwide competition that encourages high school students to participate in NASA research topics. Students compete in the areas of engineering, computation, journalism and art. The winner of the supercomputer division receives a week-long internship at Ames to conduct research at the Numerical Aerodynamic Simulation Facility.

Robotics FIRST

<http://www.usfirst.org>

For Inspiration and Recognition of Science and Technology (FIRST) hosts high school students from fourteen Western States who design robots for this annual regional competition while gaining an inside look at the engineering profession. Students team up with engineers from businesses and universities for six weeks to brainstorm, design, construct and test their "champion robot."

Museums, Science Centers and Field Trips

American Association of Science and Technology Center

<http://www.astc.org>

The Association of Science-Technology Centers Incorporated (ASTC) is an organization of science centers and museums dedicated to furthering the public understanding of science. ASTC encourages excellence and innovation in informal science learning by serving and linking its members worldwide and advancing their common goals. You can search for a science center near you. Resource center, professional development, publications and membership info. Phone: (202) 783-7200



Posters and Lithographs

NASA CORE (Central Operation of Resources Educators)

<http://core.nasa.gov>

NASA CORE (Central Operation of Resources Educators) offers a wide variety of video tapes, slide sets, CD-ROM and Laserdiscs covering a variety of topics: i.e. aeronautics, earth science, careers, space sciences/exploration, energy, social sciences, life sciences and mathematics/physics, biology and history. phone: 440-775-1400, M-F, 8-4pm EST e-mail: nasaco@leeca.esu.k12.oh.us

NASA Spacelink

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Speakers and Assemblies

Aerospace Education Service Program (AESP)

<http://www.okstate.edu/aesp/AESP.htm>

AESP is a program in which Aerospace Education Specialists provide school-based programs and services at school sites which include: staff development programs, lecture-demonstration programs for students and faculty, and curriculum development projects. The content includes earth science, space science, life science and aerospace transportation research and development discoveries and future plans. Due to the immense popularity of this program, a visit should be requested well in advance. There is no charge to schools for this program.

Speaker's Bureau

<http://ccf.arc.nasa.gov/dx/SBsubjects.html>

Speaker's Bureau provides speakers to educational institutions, business organizations, service clubs and professional and technical societies to speak on NASA and Ames Research Center programs. There is no fee for this service; however, reimbursement for transportation and per diem may be necessary. Please make requests at least six weeks in advance.

Videos and Slides

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phone: 440-775-1400, M-F, 8-4pm EST e-mail: nasaco@leeca.esu.k12.oh.us



Other Web sites

ExInEd (Exploration In Education) Electronic Picture Book(s)

<http://www.stsci.edu/exined/picturebooks.html>

Electronic picture books on a variety of subjects. HyperCard Player 2.1 is needed "read" the picture books but is available to download for free on the Web site.

Learning Technologies Project (LTP)

<http://learn.ivv.nasa.gov>

NASA's Learning Technologies Project (LTP) provides online, interactive, multimedia educational products derived from NASA Enterprise content. LTP projects increase public access to the storehouse of science that NASA has acquired as well as the data it is currently acquiring. LTP provides this content in accordance with the NASA Plan for Education by creating curriculum enhancements for K-12 and K-14 educators and delivering these materials via the Internet and other emerging technologies. LTP products are offered at about 5,000 (or 5%) of the schools nationwide.

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National Council of Teachers of Mathematics

<http://www.nctm.org>

National organization dedicated to inform math teachers about NCTM and related topics and ideas.

National Science Teacher's Association

<http://www.nsta.org>

National organization dedicated to inform science teachers about NSTA and related topics and ideas.

The Virtual Library

<http://vlib.org>

This site isn't pretty, but it's a quick way to find resources on all areas of science, education, engineering, humanities, law, recreation and many more!

ThinkQuest

<http://www.thinkquest.org>

Designed in 1996 to encourage the use of computer and network technology in education. Includes contests for students age 12-19 or grades 4-6 and a competition for student teachers, college and university faculty. ThinkQuest has brought together over 50,000 students and educators from 100 countries bringing together young people from widely divergent cultures and languages, levels of technology and socio-economic backgrounds.

US Department of Education

<http://www.ed.gov>

Includes educational research and statistics, news and events as well as publications and products.

Astrobiology

(Anchors) Books and Magazines/ Career Resources and Professional Organizations/ Curriculum Materials/ Other Web Sites

Books and Magazines

How to Build a Habitable Planet

Wallace S. Broecker, 1985

Traces the development of the Earth by describing the Big Bang, galaxy formation, star and planet formation, the Earth's segregation into layers, running water and temperature control and human civilization.

Life in the Universe

A. Operin and V. Fesenkov, 1961

This book deals with the question "Does life exist throughout the universe and in particular on the planets of our solar system?"

Mysteries of Life on Earth and Beyond

Franklyn M. Branley, 1987

ages 10-14

This book examines the significant research that is being done on life on Earth and beyond.
ISBN 0-525-67195-1

Other Worlds Is There Life Out There?

David J. Darling, 1985

children's book ages 9-12

This book examines the possibilities of finding life on nearby worlds.
ISBN 0-87518-287-9

Planets for Man

Stephen H. Dole and Isaac Asimov, 1964

This was one of the first astrobiology books written. It speculates on a time when human beings will be able to travel the vast distances to the other stars and attempts to determine—on the basis of the biological and cosmological knowledge of the time—whether there are other worlds where man can survive or where human life may even now be flourishing.

Rare Earth: Why Complex Life is Uncommon in the Universe

Peter D. Ward and Donald Brownlee, 2000

This book explains a new theory that these two astrobiologists formed of how they believe simple microbial life is common in the universe, but more complex life is rare.

ISBN 0-387-98701-0

The Search for Extraterrestrial Intelligence

Dennis B. Fradin, 1987

ages 9-12

Chronicles briefly scientific theories about and search for intelligent life beyond the Earth. Career Resources and Professional Organizations

So You Want to be an Astrobiologist

<http://www2.astrobiology.com/how.to.html>

Definitions of Astrobiology and the questions that Astrobiologists research. Recommendations on how to become an Astrobiologist and books to read.

Curriculum Materials

Astrobiology: The Search for Life in Other Worlds

<http://astrobio.terc.edu>

A high school course curriculum being developed by TERC (a nonprofit research and development organization committed to Improving mathematics and science learning and teaching), NASA, and an advisory group of scientists and educators. Students use an inquiry-based, interdisciplinary approach to explore astrobiology.

ExoQuest

<http://www.cotf.edu/ExoQues>

A multimedia educational product for grades 7-9.

With ExoQuest, students travel on virtual journeys to destinations in the solar system and beyond. Their trips are based on past, present, and future NASA missions. At each destination students conduct investigations that include hands-on and simulated experiments. Each investigation poses problems that focus on different areas of research, providing an interdisciplinary approach to science and the scientific method. The ExoQuest curriculum includes twelve activity modules.

SETI education

<http://www.seti.org/education/Welcome.html>

Voyages Through Time is a standards-based curriculum development project for an integrated one-year high school science course centered on the unifying theme of evolution. Learn how you can be involved in field testing. The Life in the Universe series is a set of six teacher's guides for grades 3-9 that teach standards-based science around the theme of the search for extraterrestrial intelligence. Learn about the guides, and download sample lessons.

Other Web Sites

Astrobiology at NASA

<http://astrobiology.arc.nasa.gov>

Information on the goals and missions of astrobiology, educational resources and research updates.

Astrobiology: The Search for Life in Other Worlds

<http://astrobio.terc.edu>

A high school course curriculum being developed by TERC (a nonprofit research and development organization committed to Improving mathematics and science learning and teaching), NASA, and an advisory group of scientists and educators. Students use an inquiry-based, interdisciplinary approach to explore astrobiology.

ExoQuest

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NASA Specialized Center of Research and Training NSCORT / Exobiology

<http://exobio.ucsd.edu>

A consortium between University of California, San Diego, The Scripps Research Institute (TSRI) and The Salk Institute (SALK.) The mission of this NSCORT is to conduct research in Exobiology; to train young scientists for research careers in Exobiology and related areas; and to communicate with scientists, students and the general public about the field of Exobiology.

New York Center for Studies on the Origins of Life

<http://www.origins.rpi.edu/>

Broadcast segments of WAMC's show "Origins of Life."

SETI education

<http://www.seti.org/education/Welcome.html>

Voyages Through Time is a standards-based curriculum development project for an integrated one-year high school science course centered on the unifying theme of evolution. Learn how you can be involved in field testing. The Life in the Universe series is a set of six teacher's guides for grades 3-9 that teach standards-based science around the theme of the search for extraterrestrial intelligence. Learn about the guides, and download sample lessons.

The Astrobiology Web

<http://www.astrobiology.com>

An online magazine about the latest events in astrobiology.

Astronomy and Astrophysics

(Anchors) Books and Magazines/ Career Resources and Professional Organizations/ Hands-On Materials/ Speakers and Assemblies/ Student Camps and Clubs/ Videos and Slides/ Other Web Sites

Books and Magazines

1000 Facts About Space

Pam Beasant

Book Ages 9-12

ISBN 1856978117

Astronomy

<http://www2.astronomy.com/astro>

Magazine: News, events, subscription info, and product catalog.

Astronomy Smart Junior: The Science of the Solar System and Beyond

(Princeton Review Series) Michael L. Bentley

Book Ages 9-12

ISBN 0679769064

Color and Light

Book: 21 teacher written experiments and materials to help your classroom learn about light and color.

By Educational Insights

Make it Work! Space

Book: This book explores space from our planet Earth to the edge of the universe. It explains how planets and stars are formed and shows how to make simple instruments to observe them.

New Astronomer

Carole Stott

Book All Ages

Practical guide to finding and studying observable bodies - moon, sun, planets, comets, stars, star clusters, galaxies. Recent Hubble photos, etc.

ISBN 0789441756

Sky and Telescope

<http://www.skypub.com/skytel/skytel.shtml>

Magazine: Monthly magazine containing sky maps, astrophotos, and observation tips for sky-gazers of all levels.

To Space and Back

Written by Sally Ride

Book for All Ages

The first woman from the United States to enter space shares the personal experience of living and working while orbiting above Earth's atmosphere, unveiling the human side of space exploration.

ISBN 0688091121

Career Resources and Professional Organizations

American Astronomical Society

<http://www.aas.org>

Requesta pamphlet with information on careers in astronomy.

American Institute of Physics

<http://www.aip.org>

Member organization which gives information on the advancement of the knowledge of physics and how it can be applied to human welfare.

The American Physical Society

<http://www.aps.org>

An organization of more than 42,000 physicists worldwide committed to advancing and diffusing the knowledge of physics. Publisher of three physics journals.

Hands-On Materials

Light Crystal Prism

(4.5") Use to split a beam of light into a multi-colored rainbow.

By TEDCO, Inc

Solar System Science Kit

Ages 8+ Broad range of lessons about astronomy, but mostly helps kids learn relative scale of planets by using kit to construct one scale model of the 9 planets.

By Educational Design

Speakers and Assemblies

Aerospace Education Service Program (AESP)

<http://www.okstate.edu/aesp/AESP.html>

AESP is a program in which Aerospace Education Specialists provide school-based programs and services at school sites which include: staff development programs, lecture-demonstration programs for students and faculty, and curriculum development projects. The content includes earth science, space science, life science and aerospace transportation research and development discoveries and future plans. Due to the immense popularity of this program, a visit should be requested well in advance. There is no charge to schools for this program.

Project Astro

http://aspsky.org/project_astro.html

An astronomer is matched to a classroom and makes four visits to this class during the school year.

Student Camps and Clubs

US Space Camp

<http://www.spacecamp.com>

Official site, with news on camp programs, plus images, sound clips, video, and other space links. Offers a variety of astronaut and fighter pilot training programs for children and adults at locations in Alabama, California, and Florida.

Videos and Slides

Contact

Video: A Warner Brothers movie starring Jodie Foster and Matthew McConnuhy

NOAA Corps: The Seventh Service

Video: Opportunities in Oceanography, Meteorology, Physics, Training Corp troops, sea duty and shore duty Grades: 9–12.

Accessible through the NASA CORE catalog at <http://core.nasa.gov>

Other Web Sites

Astronomical Society of the Pacific

<http://www.aspsky.org>

General info about ASP; catalog, membership, professional publications, annual meeting, astronomy education, and links.

Hubble Site

<http://hubble.stsci.edu>

The place to go to find out information about the Hubble telescope missions. Check out the latest news and a wonderful gallery of pictures.

NASA Office of Space Science

<http://spacescience.nasa.gov>

Information on NASA's space missions.

Observatorium

<http://observe.ivv.nasa.gov>

NASA's Observatorium is a public access site for Earth and space data. Visit this site to access pictures of the Earth, planets, stars, online activities, and lesson plans and the stories that go with each.

SETI Institute Online (the Search for Extraterrestrial Intelligence)

<http://www.seti.org>

General info on science, education, funding and membership relating to Extraterrestrial Intelligence.

SIRIF (Space Infrared Telescope Facility) Web Page

<http://sirtf.caltech.edu>

This site not only includes news and facts related to astronomy but also includes an excellent education and outreach section.

SOFIA (Stratospheric Observatory for Infrared Astronomy)

<http://sofia.arc.nasa.gov>

This site will include activities in science and education. A unique and important element SOFIA Education Program will be the Teacher Flight Program, which will provide opportunities for teachers to fly aboard the observatory, experience the research environment first-hand, interact closely with SOFIA science teams. SOFIA is expected to start science flights in 2002, and the SOFIA Education Program will become fully active at that time.

Space Telescope Science Institute Home Page - Hubble Space Telescope

<http://www.stsci.edu>

Information, education activities and a wealth of images from the Hubble Space Telescope.

The Planetary Society

<http://www.planetary.org>

A public organization that supports astronomy research and public education. Click the "Join Us" link at the top of the Home Page to become a member. Membership fees for US, Canadian and Int'l range from \$15-\$30 for students, \$25-40 for general public. (En Español)
65 North Catalina Ave Pasadena, CA 91106-2301 Phone: 1-800-WOW-MARS (1-800-969-6277)
Fax: (626) 793-5528 Email: tps@planetary.org



Resources

Yvonne Pendleton's Astronomy Web site for students

<http://web99.arc.nasa.gov/~yvonne>

Yvonne and her work with Peterson Middle School and Laurelwood Elementary School, studying astronomy.

Atmospheric Sciences

(Anchors) Career Resources and Professional Organizations/ Videos and Slides/ Other Web Sites

Career Resources and Professional Organizations

American Chemical Society

<http://www.acs.org>

Information on chemistry careers, news, educational resources, and membership.

International Society of Biometeorology (ISB)

<http://www.es.mq.edu.au/ISB>

Biometeorology is an interdisciplinary science studying the interaction between atmospheric processes and living organisms – plants, animals and humans.

Other Web Sites

AIRSITE

<http://airsite.unc.edu>

Atmospheric chemistry International Research Site for Information and Technology Exchange.

Ask Jack

<http://www.usatoday.com/weather/askjack/wjack1.htm>

Send Jack Williams a question about weather/climate and he and his team from USA Today will post replies on the Web site.

Atmospheric Chemistry Data and Resources from Goddard Space Flight Center

<http://www.gsfc.nasa.gov>

Information about the UARS (Upper Atmosphere Research Satellite), TOMS (Total Ozone mapping Spectrometer), SSBUV (Shuttle Solar Background Ultraviolet)—Data, ed. Resources, images, etc.

Atmospheric Chemistry Glossary

<http://www.shsu.edu/~chemistry/Glossary/glos.html>

Definitions of words related to atmospheric chemistry.



INSPIRE (Interactive NASA Space Physics Ionosphere Radio Experiments)

<http://image.gsfc.nasa.gov/poetry/inspire>

The INSPIRE Project has been involved in the investigation of very low frequency radio signals in the earth's magnetosphere.

National Weather Service

<http://www.nws.noaa.gov>

Direct access to US official weather forecast products and observations (En Español)

The National Oceanic and Atmospheric Administration

<http://www.noaa.gov>

Photo library, visualizations in 3-D and virtual reality, climate and weather, maps, satellite images, employment opportunities and grant info, and webcasts.

Biology

(Anchors) Career Resources and Professional Organizations/ Curriculum Materials/ Events/ Hands-On Materials/ Videos and Slides/ Other Web Sites

Career Resources and Professional Organizations

American Institute of Biological Sciences

<http://www.aibs.org/core/index.html>

This professional organization includes more than 150,000 biologists dedicated to advancing research and education in the biological, medical, environmental and agricultural sciences.

American Physiological Society

<http://www.faseb.org/aps>

This organization is devoted to fostering scientific research, education and the dissemination of scientific information.

American Society for Biochemistry and Molecular Biology

Non-profit scientific and educational group. Primary activities include publishing the Journal of Biological Chemistry. Educational activities, educational resources, professional development, mentoring, employment and outreach. Free career brochure "Unlocking Life's Secrets."

9650 Rockville Pike, Bethesda, MD 20814 phone: 301-530-7417

American Society for Microbiology

<http://www.asmta.org>

The American Society for Microbiology is the oldest and largest single life science membership organization in the world. It includes 42,000 members in 25 disciplines of microbiological specialization.

Biophysical Society

<http://www.biophysics.org/biophys/society/biohome.htm>

Resource for textbooks online, Biophysical Journal, Careers in Biophysics booklet, database of women and minority speakers. 9650 Rockville Pike, Bethesda, MD 20814

Biotechnology Industry Organization

<http://www.bio.org/welcome.html>

Represents biotech companies, academic institution and state biotech centers.

Curriculum Materials

STELLAR

<http://stellar.arc.nasa.gov/stellar>

STELLAR has a Web site: which contains over 60 activities in both English and Spanish. It has produced two CD's Heart in Space and Vestibular System. It has also produced two editions of Space Life Express.

Events

Earth Day

<http://www.sdearthtimes.com/edn>

On April 22nd of each year, Earth day belongs to the public and isn't run by any one group but there are several large non-profit groups and coalitions that gather info, and organize activities and events. The Earth Day Project Library is a good place to start.

Hands-On Materials

Nature's Greenhouse

Four fascinating nature experiments and see-through greenhouse.
By Educational Insights

Videos and Slides

NOAA Corps: The Seventh Service

Accessible through the NASA CORE catalog at <http://core.nasa.gov>

Video: Opportunities in Oceanography, Meteorology, Physics, Training Corp troops, sea duty and shore duty Grades: 9—12.

Other Web sites

Biochemist online

<http://www.biochemist.com>

Publications - read or submit, chat rooms, job bank and resume services, resources.

NASA Office of Life and Microgravity Sciences and Applications (OLMSA)

<http://www.hq.nasa.gov/office/olmsa>

OLMSA leads the nation's efforts in life and microgravity sciences, related technology development, and applications using the attributes of the space environment to advance knowledge, to improve the quality of life on Earth, and to strengthen the foundations for continuing the exploration and utilization of space. Find out more about these NASA missions.

National Biological Information Infrastructure (NBII)

<http://www.nbii.gov/index.html>

The electronic gateway to biological data and information maintained by federal, state and local government agencies; private sector organizations; and other partners around the nation and the world.

National Biological Information Infrastructure (NBII) Education Page

<http://www.nbii.gov/education/index.html>

A resource for parents, teachers and students. Resources on all areas of biology—human, aquatic, mammalian and microbial biology; botany; biodiversity and environment.

Careers

(Anchors) Books and Magazines/ Events/ Posters and Lithographs/ Speakers and Assemblies/ Videos and Slides/ Other Web Sites/ Women and Minorities

Books and Magazines

Imagine: A Magazine for Talented Youth

<http://www.jhu.edu/~gifted/set/imagine.html>

Extracurricular activities, college planning, college reviews, exploring careers, book reviews, and fun stuff.

Events

National Engineers Week

<http://www.ework.org>

During National Engineers Week, take the opportunity to have an engineer from your community visit your classroom. Projects, resources, telecasts, how to volunteer and how to order materials.

1420 King Street Alexandria, VA 22314, 703-684-2852 email: ework@nspe.org



Posters and Lithographs

Superstars of Modern Aeronautics (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Poster: Features 12 significant people in Aeronautics Grades: 3—8

Superstars of Spaceflight (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Poster: Features 15 astronauts Grades: 3—8

Speakers and Assemblies

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National Engineers Week

<http://www.eweek.org>

During National Engineers Week, take the opportunity to have an engineer from your community visit your classroom. Projects, resources, telecasts, how to volunteer and how to order materials. 1420 King Street Alexandria, VA 22314, 703-684-2852 email: eweek@nspe.org

Speaker's Bureau

<http://ccf.arc.nasa.gov/dx/SBsubjects.html>

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Videos and Slides

Careers Aerospace Engineer (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Career profile of Greg Frazier, Mechanical engineer at Goddard Grades: 4+

Engineers: Turning Ideas into Reality (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Short comments by engineers on why they chose their career Grades: 9+



Journey Into Cyberspace (Accessible through the NASA CORE catalog)

<http://careerjourney.vsgc.odu.edu>

Video and Web: This video and Web site were produced by the Virginia Space Grant Consortium to encourage middle school students in math, science and technology. University students in the video demonstrate the opportunities available and increase student awareness about the wide-range of careers in engineering, science and high technology fields. Printed curriculum materials are also on the site. Grades: 7-8

Looking up to your Aviation Career (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Careers in Aviation Grades: 6+

NOAA Corps: The Seventh Service (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Opportunities in Oceanography, Meteorology, Physics, Training Corp troops, sea duty and shore duty Grades: 9-12

Preparing Today for Tomorrow (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Aerospace opportunities at NASA Langley Grades: 4-8

Space for Women (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Opportunities for women at NASA Grades: 9-12

Take the High Road (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Description and necessary education for careers in aerospace Grades: 7-12

Video: Engineers: Turning Ideas Into Reality (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Offers a series of short commentaries by several engineers on why they chose their particular field of engineering and how they feel it impacts everyday life. Grades: 9-Adult

Where Dreams Come True (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: NASA career opportunities for minorities and women Grades: 9-12

Winning: Aerospace the Next Decade (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Introduction to unique career opportunities in Aerospace Grades: 7-12

Other Web Sites

Aero and Space Comic Book

http://graphix2.larc.nasa.gov/gs/samples/multi/022/022_00.html

Comic book with aerospace career scenarios.

ALLSTAR Network

<http://www.allstar.fiu.edu/aero/career2.htm>

Descriptions of Aeronautic careers and a matching quiz.

Bureau of Labor Statistics Career Information for Kids

http://stats.bls.gov/k12/html/edu_over.htm

Students can select a school subject they like, careers associated with that subject and find out details about these jobs.

Career Key

<http://www.ncsu.edu/careerkey/>

Find your Holland Codes based on Interests, Activities, Abilities, Statements and Values. The six personality types are: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.

Career Opportunities in Aerospace Technology

<http://www.jsc.nasa.gov/ah/jscjobs/career/page1.htm>

Descriptions of the types of work and appropriate fields of study for pursuit of NASA careers.

Careers in Aviation/Aerodynamics

<http://wings.ucdavis.edu/Careers/index.html>

Descriptions of aero careers.

CollegeView.com

<http://www.collegeview.com/careers>

This site includes online tests and tools such as Holland Code Types, Myers Briggs Type Indicator, California Psychological Inventory and the Armed Services Vocational Aptitude Battery to help students assess their personality type, interests, skills and values and to help them identify occupations that fit these.

Dictionary of Occupational Titles

http://www.wave.net/upg/immigration/dot_index.html

The U.S. Department of Labor by: specific career title; number; term titles and definitions; occupational categories, divisions, and groups; explanation of data, people, and things; and components of the definition trailer.

Earth Science Careers in NASA

<http://kids.earth.nasa.gov/archive/career/index.html>

Summaries of earth science professions.

EBiz4Teens

<http://library.thinkquest.org/28188/index2.htm>

Three students who participated in ThinkQuest (www.thinkquest.org) International Internet Challenge designed this Web site. The Web site was designed by teens for teens that are interested in taking their creative ideas and starting their own eBusiness. Read about the basics of eBusiness, starting your own eBusiness, the History and evolution of eBusiness and exciting success stories.

Extreme Science

<http://www.extremescience.com>

Descriptions of scientists and animated fieldwork settings.

Jobs with the Federal Government

<http://www.usajobs.opm.gov>

Current job openings and descriptions, information on applying, intern programs, student employment, salaries and benefits.

John Hopkins University – Center for Talented Youth

<http://www.jhu.edu/~gifted>

An academic and career guidance assessment can be done through the mail for a fee of \$175.

Meet the people who...

<http://pao.gsfc.nasa.gov/gsfcc/people/meet.htm>

Biographies of various Center employees.

NASA Astronaut Biographies

<http://www.jsc.nasa.gov/er/she/index.htm>

Astronaut biographies.

NASA Facts

<http://www.dfrc.nasa.gov/trc/careers/index.html>

Summaries of several Dryden Flight Research Center jobs

NASA Glenn Biographies

<http://www.grc.nasa.gov/WWW/PAO/html/bios.htm>

Biographies of Center and other leaders.

Occupational Outlook Handbook

<http://stats.bls.gov/ocohome.htm>

How to find information about specific occupations by: performing a keyword search, using the index, or selecting from an occupational cluster.

NASA Quest

<http://quest.arc.nasa.gov>

NASA bios and journals, chats, aero, space and women.

Space Academy

<http://liftoff.msfc.nasa.gov/academy/astronauts/wannabe.html>

Information on becoming an astronaut.

Spacelink

[http://spacelink.nasa.gov/Instructional.Materials/Curriculum.Support.Careers/.index.html](http://spacelink.nasa.gov/Instructional.Materials/Curriculum.Support/Careers/.index.html)

Links to NASA and external career-related sites.

Take Off!

<http://www.mcet.edu/nasa/index.html>

Aero and aviation careers album.

Women and Minorities

Consider a Career in Aerospace (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Poster: This poster was developed as a tool to encourage young women to pursue careers in mathematics, science, engineering and technology. It provides information and activities for educators to use with their students relating to past, present and future careers in aerospace.

Space for Women (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Opportunities for women at NASA Grades: 9–12

Where Dreams Come True (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: NASA career opportunities for minorities and women Grades: 9–12

Women of NASA

<http://quest.arc.nasa.gov/women/intro.html>

Web site: Women of NASA features biographies, journals, chats and Web casts of women who work at NASA.



Resources

Chemistry

Biochemistry (*See Biology*)

Atmospheric Chemistry (*See Atmosphere*)

(Anchors) Career Resources and Professional Organizations/ Other Web Sites

Career Resources and Professional Organizations

American Chemical Society

<http://www.acs.org>

Information on chemistry careers, news, educational resources, and membership.

American Institute of Chemical Engineers

<http://www.aiche.org>

Information on conferences, publications, careers, education and training for those interested in chemical engineering.

Other Web Sites

Chemical Engineers' Resource Page

<http://www.cheresources.com/indexzz.shtml>

Includes articles and information related to chemical engineering.

History of Chemical Engineering & Chemical Technology

http://www3.cems.umn.edu/~aiche_ug/history/h_intro.html

Information on the growth and change in the chemical industry, the chemical engineering profession, and its educational infrastructure.

Computer Science

(Anchors) Books and Magazines/ Career Resources and Professional Organizations/ Videos and Slides/ Other Web Sites

Books and Magazines

Byte

<http://www.byte.com>

Magazine about computers

MacWorld

<http://macworld.zdnet.com>

Magazine about Macintosh computers



PC World

<http://www.pcworld.com>

Magazine about PC computers

Career Resources and Professional Organizations

Association for Computing Machinery (ACM)

<http://www.acm.org>

World's first education and scientific computing society. Articles, conferences, career opportunities. 1515 Broadway, New York, NY 10036

IEEE Computer Society

<http://www.computer.org>

Technical and career resources for computer professionals. (members, students and employers), job listings, resume posting and info on continuing education and certification.

Headquarters Office, 1730 Massachusetts Ave., NW, Washington DC 20036-1992

Videos and Slides

Video and Web: Journey Into Cyberspace (Accessible through the NASA CORE catalog)

<http://careerjourney.vsgc.odu.edu>

This video and Web site were produced by the Virginia Space Grant Consortium to encourage middle school students in math, science and technology. University students in the video demonstrate the opportunities available and increase student awareness about the wide-range of careers in engineering, science and high technology fields. Printed curriculum materials are also on the site. Grades: 7-8.

Other Web Sites

Biochemist online

<http://www.biochemist.com>

Publications - read or submit, chat rooms, job bank and resume services, resources

Engineering

(Anchors) Career Resources and Professional Organizations/ Events/ Posters and Lithographs/ Speakers and Assemblies/ Videos and Slides/ Other Web Sites

Career Resources and Professional Organizations

Aero and Space Comic Book

http://graphix2.larc.nasa.gov/gs/samples/multi/022/022_00.html

Comic book with aerospace career scenarios.

ALLSTAR

Network <http://www.allstar.fiu.edu/aero/career2.htm>

Descriptions of Aeronautic careers and a matching quiz.

American Institute of Aeronautics and Astronautics

<http://www.aiaa.org>

AIAA - primary purpose is to advance the arts, sciences, and technology of aeronautics and astronautics, and to foster promote the professionalism of those engaged in these pursuits.

Inc. Suite 500, 1801 Alexander Bell Drive, Reston, VA 20191-4344

Careers in Aviation/Aerodynamics

<http://wings.ucdavis.edu/Careers/index.html>

Descriptions of aero careers.

For Inspiration and Recognition of Science and Technology (FIRST)

<http://www.usfirst.org>

Look here for Robotics FIRST info. A non-profit organization whose mission is to generate an interest in science and engineering among today's youth. Primary means of accomplishing this goal is through annual robot competitions, which began in 1992. We are also in the process of opening a science and technology facility in downtown Manchester, NH.

Institute of Electrical and Electronics Engineers

<http://www.ieee.org>

Non-profit, technical professional association. Leading authority in tech areas ranging from computer engineering, biomedical technology and telecommunications, to electric power, aerospace and consumer electricity and produces 30% of the world's published literature in elec. Eng., computer and control technology. Includes educational opportunities, student branches, and advocacy for women and ethics. 1828 L St. NW Suite 1202, Washington, DC 20036

Junior Engineering Technical Society

<http://www.jets.org>

Resource for pre-college engineering information.

NASA Facts

<http://www.dfrc.nasa.gov/trc/careers/index.html>

Summaries of several Dryden Flight Research Center jobs

Society of Manufacturing Engineers

<http://www.sme.org>

Provides manufacturing information, standards, conferences, education, and services to manufacturing professionals. Conferences/Competitions, book and video resources, Grants/scholarships, certification/professional licensure info. One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930

Take Off!

<http://www.mcet.edu/nasa/index.html>

Aero and aviation careers album

Events

Botball

<http://rspacm1.arc.nasa.gov/botball/index.html>

This program involves high school students, under the guidance of their teachers, and with consultation from members of the supporting organizations, in creating a mobile robot over four weeks to compete in a regional Botball tournament. Teachers and members of supporting organizations are involved in a three-day tutorial to learn robotic technology and integration into regular math and science curriculum prior to building the robots.

National Engineers Week

<http://www.eweek.org>

During National Engineers Week, take the opportunity to have an engineer from your community visit your classroom. Projects, resources, telecasts, how to volunteer and how to order materials. 1420 King Street Alexandria, VA 22314, 703-684-2852 email: eweek@nspe.org

Robotics FIRST

<http://www.usfirst.org>

For Inspiration and Recognition of Science and Technology (FIRST) hosts high school students from fourteen Western States who design robots for this annual regional competition while gaining an inside look at the engineering profession. Students team up with engineers from businesses and universities for six weeks to brainstorm, design, construct and test their "champion robot"

Posters and Lithographs

Poster: Superstars of Modern Aeronautics (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Features 12 significant people in Aeronautics Grades: 3—8

Speakers and Assemblies

National Engineers Week

<http://www.eweek.org>

During National Engineers Week, take the opportunity to have an engineer from your community visit your classroom. Projects, resources, telecasts, how to volunteer and how to order materials. 1420 King Street Alexandria, VA 22314, 703-684-2852 email: eweek@nspe.org

Videos and Slides

Careers Aerospace Engineer (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Career profile of Greg Frazier, Mechanical engineer at Goddard Grades: 4+

Engineers: Turning Ideas into Reality (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Short comments by engineers on why they chose their career Grades: 9+

Engineers: Turning Ideas Into Reality (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Offers a series of short commentaries by several engineers on why they chose their particular field of engineering and how they feel it impacts everyday life. Grades: 9-Adult

Journey Into Cyberspace (Accessible through the NASA CORE catalog)

<http://careerjourney.vsgc.odu.edu>

Video and Web: This video and Web site were produced by the Virginia Space Grant Consortium to encourage middle school students in math, science and technology. University students in the video demonstrate the opportunities available and increase student awareness about the wide-range of careers in engineering, science and high technology fields. Printed curriculum materials are also on the site. Grades: 7-8.

Looking up to your Aviation Career (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Careers in Aviation Grades: 6+

Preparing Today for Tomorrow (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Aerospace opportunities at NASA Langley Grades: 4—8





Resources

Take the High Road (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Description and necessary education for careers in aerospace Grades: 7–12

Winning: Aerospace the Next Decade (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Introduction to unique career opportunities in Aerospace Grades: 7–12

Other Web Sites

Discover Engineering Online

<http://www.discoverengineering.org/eweek/index.html>

A Web site designed especially for grades 6-9 and brought to you by National Engineer's Week. Variety of resources downloads trivia and more!

For Inspiration and Recognition of Science and Technology (FIRST)

<http://www.usfirst.org>

*Look here for Robotics FIRST info. A non-profit organization whose mission is to generate an interest in science and engineering among today's youth. Primary means of accomplishing this goal is through annual robot competitions, which began in 1992. We are also in the process of opening a science and technology facility in downtown Manchester, NH.

KISS Institute for Practical Robotics (KIPR)

<http://www.kipr.org>

*Look here for Botball information.

Lindsey Square Bldg. D, STE 100 1818 W. Lindsey Norman, OK 73069 Phone: (405) 325-7864
Fax: (405) 325-7797 Email: kipr@kipr.org

Robotics Education Program (REP)

<http://robotics.arc.nasa.gov>

REP is your NASA source for K-12 robotics education. REP organizes robotic competitions and will be offering online robotics courses and labs for credit in the future.



Geology

Atmosphere and Weather (*See Atmosphere*)

(Anchors) Books and Magazines/ Career Resources and Professional Organizations/ Events/ Hands-On Materials/ Videos and Slides/ Other Web Sites

Books and Magazines

Dr. Art's Guide to Planet Earth

Art Sussman, Ph.D. 2000

ages 12+

This book describes Earth as a whole system made up of three main parts and how they work together: matter, energy and life.

ISBN 1-890132-73-X

This Dynamic Earth: The Story of Plate Tectonics

<http://pubs.usgs.gov/publications/text/dynamic.html>

W. Jacqueline Kious and Robert I Tilling U.S. Geological Survey

This booklet gives a brief introduction to the concept of plate tectonics with excellent illustrations and photographs. ISBN 0-16-048220-8

Career Resources and Professional Organizations

Earth Science Careers in NASA

<http://kids.earth.nasa.gov/archive/career/index.html>

Summaries of earth science professions.

Events

Earth Day

<http://www.sdearthtimes.com/edn>

On April 22nd of each year, Earth day belongs to the public and isn't run by any one group but there are several large non-profit groups and coalitions that gather info, and organize activities and events. The Earth Day Project Library is a good place to start.

Hands-On Materials

Hands-On Nature Adventures – Rocks

Explore rock and mineral properties, classification with 16 authentic specimens. Id charts and magnifying glass included.

By Educational Insights

Lunar Samples

<http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Exploring.the.Moon/About.The.Lunar.Sample.Disk>

Lunar rock and regolith samples are made available for classroom use through the NASA Education Resource Centers (<http://www.jpl.nasa.gov/forum/erccenter.html>). Six samples of rocks and regolith are embedded in a 15-cm diameter plastic disk. Disks are sent via registered mail to educators for one- to two-week loan periods. The package also includes this book *Exploring the Moon*, an annotated slide set of lunar images (described more fully on Page v), and a collection of color photographs and descriptions of the six samples.

Smithsonian Smartlabs Volcano

Build and erupt your very own volcano using non-toxic chemicals. Real volcanic rocks included.

Videos and Slides

NOAA Corps: The Seventh Service (Accessible through the NASA CORE catalog)

<http://core.nasa.gov>

Video: Opportunities in Oceanography, Meteorology, Physics, Training Corp troops, sea duty and shore duty Grades: 9–12

Other Web Sites

Ask-A-Geologist

<http://walrus.wr.usgs.gov/docs/ask-a-ge.html>

e-mail your earth science question to a US Geological Survey earth scientist

Geologylink

<http://www.geologylink.com>

Daily geo-news updates, discussion forums, an expansive directory of links, virtual field trips, geology classes and a glossary.

Global Learning and Observations to Benefit the Environment (GLOBE)

<http://www.globe.gov>

GLOBE is a worldwide science and education program coordinating the work of students, teachers and scientists to study and understand the global environment. GLOBE students make environmental observations at or near their schools and report their data through the Internet. Scientists use GLOBE data in their research and provide feedback to the students to enrich their science education. Global images based on GLOBE student data are displayed on the World Wide Web, enabling students and other visitors to visualize the student environmental observations.

NASA Office of Earth Science

<http://www.hq.nasa.gov/office/mtpe/>

Information on NASA's Earth science missions, research, latest news and related educational resources.

NASA/USGS Planetary Geologic Mapping Program

http://wwwflag.wr.usgs.gov/USGSFlag/Space/GEOMAP/PGM_home.html

Geologic mapping investigation of imaged planetary bodies (except Earth).

U.S. Geological Survey Home Page

<http://www.usgs.gov>

Find picture and detailed maps, search the library and research fascinating topics in Earth Science like earthquakes, floods, volcanoes and more!

Management

(Anchors) Career Resources and Professional Organizations/ Student Camps and Clubs/

Career Resources and Professional Organizations

American Management Association

<http://www.amanet.org/index.htm>

AMA is a membership-based management development organization. AMA offers a full range of business education and management development programs for individuals and organizations in Europe, the Americas and Asia. Through a variety of seminars and conferences, assessments and customized learning solutions, books and on-line resources, more than 700,000 AMA members and customers a year learn superior business skills and best management practices from a faculty of top practitioners.

1601 Broadway, New York, NY 10019-7420

National Management Association

<http://www.nma1.org>

The only association of its kind, devoted to the personal and professional development of America's workforce.

2210 Arbor Blvd. Dayton, OH 45439

Student Camps and Clubs

Junior Achievement, Inc.

<http://www.ja.org>

JA educates and inspires young people to value free enterprise, business and economics to improve the quality of their lives. Activities educate them about business and economics and help prepare them for fulfilling careers.

One Education Way Colorado Springs, CO 80906 Phone: 719-540-8000



National Council on Youth Leadership

<http://www.ncyl.org>

NCYL is a non-profit organization dedicated to the belief that the recognition, encouragement and leadership skills we give to young men and women today serve as a powerful inspiration that can shape their behavior in tomorrow's world.

Phone: 888-462-9598

Toastmasters International

<http://www.toastmasters.org>

Toastmasters is the best way to improve your communication skills. Their club can help you lose the fear of public speaking and learn skills that will help you be more successful in every path of life/career.

Mathematics

(Anchors) Career Resources and Professional Organizations/ Student Camps and Clubs/ Other Web Sites

Career Resources and Professional Organizations

American Mathematical Society

<http://www.ams.org>

Founded in 1888 to further mathematical research and scholarship. Job search, meetings, membership info, education, scholarships, job-hunting advice, and info on math camps for high school students. Department of Professional Programs and Services, P.O. Box 6248, Providence, RI 02940-6248

Mathematical Association of America

<http://www.maa.org/>

Memberships, news, student chapters, professional development, book reviews, employment opportunities.

1529 18th St. NW, Washington D.C. 20036

Society for Industrial and Applied Mathematics

The organization of applied mathematics and computational scientists dedicated to enriching our profession through publications, conferences, activity groups and programs since 1952.

3600 University City Science Center, Philadelphia, PA 19104-2688 phone: 215-382-9800

Student Camps and Clubs

Mu Alpha Theta

<http://mualphatheta.org/what.html>

This organization is a national high school and junior and community college mathematics club for honors students who participate in various activities such as state competitions, annual conventions or tutoring.

Other Web Sites

National Council of Teachers of Mathematics

<http://www.nctm.org>

Organization of math instructors to ensure excellent mathematics education for all students. This site includes information on the national mathematics education standards, conferences and publications.

Psychology

Career Resources and Professional Organizations

American Psychological Association

<http://www.apa.org>

The APA is the largest scientific and professional organization representing psychology in the United States and has more than 159,000 members. This site includes career planning information, education programs and college summer programs.

National Association of School Psychologists

<http://www.naspweb.org>

Promoting educationally and psychologically healthy environments for all children and youth
4030 East West Highway, Suite 402 Bethesda, MD 20814

National Mentoring Partnership

<http://www.mentoring.org>

The National Mentoring Partnership is an advocate for the expansion of mentoring and a resource for mentors and mentoring initiative nationwide.